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09/895,456	06/29/2001	Anil Kumar Annadata	M-11830 US	9005

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EXAMINER
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UBILES, MARIE C

ART UNIT	PAPER NUMBER
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2642

DATE MAILED: 03/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/895,456

Applicant(s)

ANNADATA ET AL.

Examiner

Marie C. Ubiles

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 13-17, 23, 25-27, and 29-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Crowther et al. (EP 1113656).

As for claim 1, Crowther et al. discloses a method, apparatus, and customer contact or call server that provides a unified queuing mechanism for queuing multiple media requests (i.e. a method of routing work items in a multi-channel communication queuing system)(See Abstract, lines 1-3), the method comprising, a list of skillsets for the assignment of requests to agents (i.e. forming a list of routes) (See Fig. 3 and Detailed Description, Col. 7, lines 38-41), wherein each skillset (i.e. route) list specifies the type of multi-media communication used (e.g. *e-mail, voice, voice/video call request, web-form*) for assigning one or more pending requests (i.e. work items) or priority levels P1, P2, P3, PA (i.e. wherein each route includes information related to the type of communication media available along the route for handling one or more of the work items). (See Abstract, lines 15-22, Figs 3-6, and Detailed Description, Col. 8, lines 10-20).

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As for claim 2, Crowther et al. specifies two queues, idle agent and pending requests queues, within the skillset list (i.e. each route further includes information indicating whether the route is active). (See Detailed Description, Col. 5, lines 39-41).

As for claims 3, Crowther et al. discloses the invention as claimed, wherein each skillset (i.e. route) is also assigned an interruptibility level (i.e. priority of the route), the interrupt level defines the importance of the skillsets (i.e. each route further includes information related to the priority of the route). (See Detailed Description, Col. 6, lines 12-16).

As for claim 4, Crowther et al. specifies that the list of skillsets include voice requests (e.g. *Sales Voice*, *Service Voice*), thus it is inherent from Crowther's et al. invention that voice requests or priority levels (i.e. work items) will be handled on real-time (i.e. each route further includes information related to whether work items can be handled real-time).

As for claim 5, Crowther et al. discloses the assignment of priority levels (i.e. service level) to the pending requests (i.e. work items) on the list of skillsets (i.e. each route further includes information related to the service level for work items handled on the route). (See Detailed Description, Col. 5, lines 41-57).

As for claim 6, Crowther et al. discloses that the priority levels of the pending requests (or work items) are accompanied with a positive whole number (e.g. *P1*, *P2*, *P3*, ..., *PA*) (i.e. each route further includes information related to the number of work items that can be assigned to the route). (See Detailed Description, Col. 5, lines 42-45).

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As for claim 7, Crowther et al. specifies that a department may be assigned skillsets like a voice call skillset and an e-mail skillset, that skillsets are assigned an interruptibility level, and predefined priority levels exist on a skillset for each pending request; this information is updated in database 140 (i.e. further comprising entering one or more properties for the route). (See Detailed Description, Col 5, lines 9-18, 29-33, 39-45 and Col 6, lines 12-16).

As 13-14, Crowther et al. discloses a multimedia queuing manager (MQM) 118 that queues the incoming media requests, an agent manager 116 that is aware of the capabilities and status of the agents (e.g. voice calls, e-mails, web forms, etc.) and a configuration database 140, which includes information about the agents including the configured skillset(s) that the agents belong/assigned to and the priority levels assigned to the agents. Crowther et al. further discloses that the program or code segments can be stored in a processor readable medium or transmitted by a computer data signal embodied in a carrier wave over a transmission medium or communication link. (i.e. a computer readable storage media comprising computer instructions to implement the method of claim 1 and a signal in a carrier medium comprising computer instructions to implement the method of claim1). (See Detailed Description, Col. 4, lines 35-39, 50-54; Col. 6, lines 9-16 and Col. 12, lines 31-35).

As for claim 31, Crowther et al. discloses the skillset assignment of agents in the queuing structure of the multimedia queuing manager 118, on the disclosed invention four skillsets are defined (sales-email, sales voice, service voice and service e-mail), agents receive pending request (i.e. work items) based on their assigned skillset. (i.e.

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wherein the queuing engine is operable to determine the communication media type (e.g. voice, e-mail) required to handle each work item, and to assign each work item to one of the one or more agents based on the communication media type.) (See Detailed Description, Col. 7, lines 38-55).

Claim 15, 25 and 29 are rejected for the same reasons as claim 1.

Claims 16, 26 and 30 are rejected for the same reasons as claims 2-6.

Claims 17 and 23 are rejected for the same reasons as claim 7.

Claim 27 is rejected for the same reasons as claims 1 and 7.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 32-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crowther et al. (EP 1113656) as applied to claims 1-7, 13-17, 23, 25-27, and 29-31 above.

Crowther et al. teaches "An agent may be assigned to one or more skillsets and priority levels within such one or more skillsets. [...] For example, an agent may be trained to answer technical questions about a product line, trained to provide sales support, speak other languages, etc. In one embodiment, to be allocated to a specific skillset an agent must possess all skills required to handle calls in that skillset. It is also contemplated that the agent need not possess all skills in that particular skillset in order to be assigned or allocated to that particular skillset. Agents can be assigned to more than one skillsets. The agent is also assigned a priority level in each skillset so that a supervisor or manager of the call center can ensure that agents are most effectively used, depending on their knowledge and level of training." (See Detailed Description, Col. 2, lines 57-58 and Col. 3, lines 1-15).

Crowther et al. further teaches "...in one embodiment, the skillset that the e-mail is queued into depends on the address that the e-mail was received on, the originator of the e-mail (e.g. corporate officer), etc." (See Detailed Description, Col. 7, lines 39-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Crowther's et al. claimed invention by assigning skillsets to an agent based on other languages spoken by said agent (i.e. wherein the queuing agent is operable to determine the language required to handle each work item, and to assign each work item to one or more of the agents based on the language required),

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based on agent's training for answering technical questions about a product line (i.e. wherein the queuing engine is operable to determine the level of agent skill required to handle each work item, and to assign each work item to one or more of the one or more agents based on the level of skill required), based on agent's department allocation as read on sales support (i.e. wherein the queuing engine is operable to determine a category for each work item, and to assign each work item to one or more agents based on the category of the work item), and by queuing an e-mail (i.e. work item) based on the address of the originator (i.e. wherein the queuing engine is operable to determine a recipient for each work item, and to assign each work item to one or more agents based on the recipient of the work item), as per the teachings of Crowther et al.; thus in this manner a supervisor or manager of the call center can ensure that agents are most effectively used, depending on their knowledge and level of training.

3. Claims 8-12, 18-22, 24, 28 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crowther et al. (EP 1113656) as applied to claims 1-7, 13-17, 23, 25-27, and 29-31 above, and in view of Broughton et al. (US 2003/0018702).

As for claims 8-12, Crowther et al. discloses the system as claimed except for the steps of combining two or more of the properties of the route using a Boolean operator, substituting a value for a variable in one or more of the properties, entering one or more escalation rules for the route, combining two or more of the escalation rules using a Boolean operator, and substituting a value for a variable in one or more of the escalation rules. Crowther et al. also lacks the limitation of the queuing engine being



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operable to determine the amount of time that a work item has been waiting to be assigned to an agent, and to escalate the search for an agent to handle the work item based on the escalation rules.

Broughton et al. teaches "...a three-tiered service model 100 for a digital multimedia contact center...there are three service tiers: self-service tier 101, deferred service tier 103, and immediate assistance tier 105. [...] A contact entering the contact center is initially assigned to one of the three tiers based on the type of media used by the contact in accessing the contact center. The embodiment shown in Fig. 1 is further described with reference to three media types: voice calls, emails, and World Wide Web, although the invention is not so limited. Voice calls are initially routed to the immediate assistance tier 103, emails are initially routed to the self-service tier 101. Subsequent routing may be performed that escalates or de-escalates the contact to another tier (shown as arrows in FIG.1). The subsequent routing can be based on one or more routing criteria, including factors defined by the contact center owner or subscriber, such as priority, access phone numbers, and time-out periods, and environmental factors such as contact activity. [...] The system architecture for contact center 200 is based on a workflow engine 201 that directs the activities of the agents in the center using workflow steps. A contact workflow is initiated by events that are routed into one of a set of workflow subsystems 205 by one of a set of media routers 221. Each media router 221 and each corresponding workflow subsystem 205 are dedicated to a contact media type. [...] Information that narrows down the set of agents to which a contact can be routed is referred to as "contact requirements". Examples of contact

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requirements include product knowledge, language fluency, and previous communication with the contact (each contact is considered a new one)." (See Detailed Description, P. 0025, lines 1-4; P. 0026, lines 1-16; P. 0027, lines 1-10; and P. 0030, lines 6-11).

Broughton et al. further teaches "The iCC uses workflows to process contact, manage events, and control the overall contact functions. [...] Each node is associated with workflow code that implements a high-level, compound script action, such as "play menu with interruptible prompts" or "play music until an agent is available", that are available to the workflow engine 900. The script actions are built from workflow steps. For ease of explanation, the script actions represented in Fig. 9A are simple, single commands, e.g., node A 911 represents the function "if (x boolean y)," where "x," "boolean," and "y" are parameters that will be replaced by values specified by an instance of the node A 911. It will be appreciated that the invention is limited by the example or by the workflow steps shown herein." (See Detailed Description, P. 0135, lines 1-2 and P. 0316, lines 6-17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Crowther's et al. invention by having a workflow code that implements a high-level, compound script action where actions (i.e. properties) are combined using a Boolean function (i.e. combining two or more properties of the route using a Boolean operator), where contacts are assigned to one of three tiers for service based on media type (i.e. entering one or more escalation rules for the route), where escalation or de-escalation to another tier can be based on one or more criteria (i.e.

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combining two or more of the escalation rules using a Boolean operator), and where parameter (i.e. variables) will be replaced by values specified by a node (i.e. substituting a value for a variable in one or more of the properties), as taught by Broughton et al; thus in this manner integrating the different media into a single center in such a way that contacts of disparate nature (i.e. work items) are allocated to agents in a more effective way.

Claims 18-22, 24 and 28 are rejected for the same reasons as claims 8-12.

As for claim 36, Broughton et al. teaches "...if the routing criteria of a contact passes a pre-defined threshold, the contact may be escalated or de-escalated, Thus an email is escalated (arrow 111) to the immediate assistance tier 103 if it has not been answered when a "time-to-reply" period elapses." (See Detailed Description, P. 0026, lines 18-23).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Crowther's et al. invention by having a pre-defined threshold for a contact (i.e. wherein the queuing engine is operable to determine the amount that a work item has been waiting to be assigned to an agent) and escalating such contact when a certain period of time elapses (i.e. to escalate the search for an agent to handle the work item based on the escalation rules), as taught by Broughton et al.; and thus in this manner provide a more efficient service to the contact customer.

### ***Conclusion***

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4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Pickering et al. (US 6,493,695) teaches methods and systems for homogeneously routing and/or queuing call center actions across media types.

Sassin et al. (US 6,449,260) teaches a multimedia automatic call distribution system.

Sikora et al. (US 6,449,646) teaches a method and apparatus for allocating mixed transaction type messages to resources via an integrated queuing mechanism.

Nourbakhsh et al. (US 2003/0009520) teaches a method and apparatus for multi-contact scheduling.

Bateman et al. (US 2002/0032809) teaches a method and system for data and voice communications via customer contract channel changing system using voice over IP.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marie C. Ubiles whose telephone number is (703) 305-0684. The examiner can normally be reached on 8am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar can be reached on (703) 305-4731. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Marie C. Ubiles  
March 15, 2004.

  
AHMAD F. MATAR  
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